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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,191	09/09/2004	Andrea Giraldo	NL 020190	2086

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EXAMINER

SHENG, TOM V

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/507,191	Applicant(s) GIRALDO ET AL.	
	Examiner Tom V. Sheng	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 cites "driving selection means for selecting rows of picture elements in a first mode of driving" on lines 4-5 and "driving means for selecting rows of picture elements in a second mode of driving the display" on lines 7-8. This is confusing since the specification only teaches one row driver 4 (see fig. 1) for row selections. Claims 2-15 are dependent on claim 1.

As for claim 5, it is unclear as to the meaning of "switches between columns j of picture elements and the means for providing data to said column j" on lines 2-4 and "switches between the columns (k - j) and said means for providing data to the columns j" on lines 4-6. The Examiner has difficulty correlating the claim with either fig. 5 or 6. Claims 6 and 7 are dependent on claim 5.

As for claim 9, it is unclear as to the meaning of "switches between columns j of picture elements and the means for providing data to said column j" on lines 2-4 and "switches between the columns (k - j) and said means for providing data to the columns

j" on lines 4-6. The Examiner has difficulty correlating the claim with either fig. 5 or 6.

Claims 10 and 11 are dependent on claim 9.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Evanicky et al. (US 5,696,529).

As for claims 1-3, Evanicky teaches a display device (display assembly 10 and base assembly 12; fig. 1A) viewable from two opposite sides (viewable from direction 20' or an opposite direction from the other side of the LCD screen 20; column 4 line 56 through column 5 line 14), the display device comprising

at least a first substrate (front supporting glass 415a; fig. 9A) being provided with electrodes (the row and column electrodes are inherently in the TFT layer 417; column 12 lines 42-53) for defining picture elements (LC pixels are inherently defined by the intersections of the row and column electrodes),

the device further comprising

driving selection means (common row driver circuits not illustrated; fig. 10; column 14 lines 24-30) for selecting rows of picture elements in a first mode of driving (for the direct view mode, selection is one row at a time with data filling from left to right;

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fig. 13A; column 15 lines 41-48), the display being viewed from a first direction (from direction 20') substantially perpendicular to said first substrate in said first mode of driving (as shown in fig. 1A) and

driving means (the common row driver circuits) for selecting rows of picture elements in a second mode of driving the display (for the projection mode, selection is one row at a time with data filling from right to left; fig. 13B; column 15 lines 48-55) being viewed from a second direction opposite to said direction in said second mode of driving (from a direction opposite to 20'),

said display device further comprising

means for providing data (video information provided from video board 530 via bus 515 to column drive circuits 501; fig. 10; column 13 lines 40-46; column 14 lines 24-30) and

driving means (multiplexing circuits 610(0-n); fig. 11) for mirroring with respect to a mirroring line of a display section the data for the contents of picture elements to be written (depending on the mode, video input 515 either feeds to each row from first to last column or reverses to feed from last to first column, by the signal asserted at the select line 515b; column 15 lines 13-40). The change of data filling sequence from one direction to another inherently results in data from the left goes to the right and vice versa with respect to a center column (when the number of columns is an odd number) or a line between two center columns (when the number of columns is an even number), thus reading on "mirroring with respect to a mirroring line of a display section the data for the contents of picture elements to be written."

As for claim 12, Evanicky teaches that the LCD screen 20 (fig. 1A) is capable of displaying 4096 true colors without frame rate modulation. This implies that 12 bits are used with 4 bits allocated to each primary color using the standard R, G, B sub-pixels per pixel. Of course, mirroring is occurring within each kind of sub-pixels.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky as applied to claims 1 and 12 above, and further in view of Harris et al. (US 5,115,228).

As for claim 13, Evanicky teaches viewing either from front in direct viewing or from rear when used with a projector. Evanicky does not teach "first and second mode of driving are performed substantially simultaneously."

Harris also teaches a display that can be viewed from either side. Moreover, Harris' display can be viewed "simultaneously" from both sides due to the use of alternating writing of data and reverse data for the two sides together coupled with the use of optical shutters to facilitate the double-sided viewing (fig. 1; column 3 line 46 through column 4 line 4). Since Evanicky already teaches writing data to each row from first to last column or from last to first column based on the mode of viewing, one of

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ordinary skill in the art would recognize that only further modification is required in order to further incorporate Harris' features of alternating writing and coupling of shutters in Evanicky's display, and thus the advantage of simultaneous double-sided viewing is also provided.

Therefore, it would have obvious for one of ordinary skill in the art to incorporate Harris' features of alternating writing and coupling of shutters in Evanicky's display, because of the further benefit of providing simultaneous double-sided display, which is advantageous in a small conference room setting and when a projector is not available.

As for claim 15, neither Evanicky nor Harris teaches using electroluminescent diodes as the picture elements. Official Notice is taken of that both the concept and advantage of using electroluminescent diodes in display is well known and expected in the art. It would have been obvious to use electroluminescent diodes for display as an alternative to liquid crystal display, as EL display is generally brighter and having a higher contrast.

Allowable Subject Matter

7. Claims 4-11 and 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: none of the prior arts of record teaches the limitations "the driving means for mirroring a display section having k columns comprise means for interchanging the

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contents of picture elements (i, j) and the contents of picture elements (i, k-j), i being a row number of the display section" of claim 4, "the driving means for mirroring a display section having k rows comprise means for interchanging the contents of picture elements (i, j) and the contents of picture elements (k-i, j), j being a column number of the display section" of claim 8, and "viewed in a direction substantially normal to the display, different sub-pixels at different sides of the display comprise an absorbing or a reflecting layer" of claim 14.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Farris (US 6,104,447) teaches a LCD that can either be viewed directly or alternatively viewed by projecting the image on a wall.

Chen (US 5,041,965) teaches a laptop display that can be detached and used as a slide for an overhead projector.

Vossler (US 5,856,819) teaches a bi-directional presentation display that comprises two display screens facing opposite direction and is illuminated by a single light source.

Arai (US 5,357,355) teaches a double-sided display that utilizes an EL screen on one side and a LCD screen on another side driven alternately.

Dolezal et al. (US 6,757,036 B1) teach a dual sided liquid crystal display by means of portions utilized separately for viewing from one side and another side.

Kim (US 6,466,292 B1) teaches a dual sided liquid crystal display, wherein the display is divided into a first region and a second region, and a polarizer and a reflector are symmetrically disposed so that the first region is displayed in a first direction and the second region is displayed in a second direction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Sheng
April 17, 2006

AMR A. AWAD
PRIMARY EXAMINER

